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HELMINTHOLOGICAL ABSTRACTS

incorporating
BIBLIOGRAPHY OF HELMINTHOLOGY
For the Year 1939.



IMPERIAL BUREAU OF AGRICULTURAL PARASITOLOGY
(HELMINTHOLOGY)

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INCORPORATING BIBLIOGRAPHY OF HELMINTHOLOGY
FOR THE YEAR 1939.

Vol. VIII, Part I.

1—Acta Medica Scandinavica.

- a. CAWSTON, F. G., 1939.—“Schistosomiasis in South Africa.” 99 (1), 92-97.

(1a) Cawston warns Scandinavian settlers in South Africa of the danger of contracting schistosomiasis in the rivers at Izotsha, near Port Shepstone, and at Eshowe in Zululand.

R.T.L.

2—American Journal of Hygiene. Section D. Helminthology.

- a. LEATHERS, W. S., KELLER, A. E. & McPHAUL, W. A., 1939.—“An investigation concerning the status of hookworm in Florida.” 29 (1), 1-16.
b. CRAM, E. B. & REARDON, L., 1939.—“Studies on oxyuriasis. XII. Epidemiological findings in Washington, D.C.” 29 (1), 17-24.
c. OTTO, G. F. & KERR, K. B., 1939.—“The immunization of dogs against hookworm, *Ancylostoma caninum*, by subcutaneous injection of graded doses of living larvae.” 29 (1), 25-45.
d. SHELDON, A. J., 1939.—“Specificity of artificial acquired immunity to *Strongyloides ratti*.” 29 (2), 47-50.
e. HOOD, M. & OLSON, S. W., 1939.—“Trichinosis in the Chicago area.” 29 (2), 51-56.
f. LEATHERS, W. S., KELLER, A. E. & McPHAUL, W. A., 1939.—“The prevalence, distribution and intensity of infestation of *Ascaris lumbricoides*, *Trichocephalus trichiura*, *Hymenolepis nana*, *Enterobius vermicularis* and *Hymenolepis diminuta* in fifty-six counties of Florida.” 29 (2), 57-66.
g. HU, S. M. K., 1939.—“Observations on the development of filarial larvae during the winter season in Shanghai region.” 29 (2), 67-74.
h. PIERCE, H. B. et al., 1939.—“Blood chemistry in human trichinosis.” 29 (2), 75-81.

(2b) The finding of 861 persons infected out of 2,097 (41%) residents of Washington, D.C. examined, indicates that oxyuriasis is a public health problem of considerable importance. No evidence was obtained that the problem is restricted to certain groups as regards race, sex, age, social-economic status or location of residence.

R.T.L.

(2c) Using a number of light infections of *Ancylostoma caninum*, Otto & Kerr were able to bring about an active immunity in dogs when very large

doses were given. The controls died under this infection. They conclude that age immunity is not distinctive but that the host can respond more fully and more quickly when older and in good health. P.A.C.

(2d) Sheldon is able to immunize rats to infection with *Strongyloides ratti* by means of a number of injections of heat-killed larvae. After 16 immunizing injections a dose of 1,000 living larvae resulted in a 0.6% development, while the controls gave 30.5% development. The reaction is, however, specific, for no immunity is conferred by the injection of heat-killed *S. stercoralis* larvae. P.A.C.

(2e) Of 428 autopsies from the Chicago area examined for *Trichinella spiralis*, 16% were found infected. Forty-eight of the autopsies were under one year of age and of these 4 were found to be positive. R.T.L.

(2g) Few microfilariae of *Wuchereria bancrofti* ingested by *Culex pipiens* var. *pallens* penetrated to the coelomic cavity during the winter months in Shanghai. Those which did so failed to develop. Infective larvae could survive in this species from November to March. If the mosquitoes had hibernated in houses not exposed to the low temperatures prevailing during the winter, the infective larvae survived longer. R.T.L.

3—American Journal of the Medical Sciences.

- a. POTE, T. B., 1939.—“The present incidence of *Trichinella spiralis* in man as determined by a study of 1,060 unselected autopsies in St. Louis hospitals.” 197 (1), 47-52.

(3a) In 1,060 autopsies of individuals in Missouri not suspected of having contracted trichinosis, 163 (i.e. 15.37%) showed encysted trichinella larvae in the muscles. In 11% the infection was a heavy one, and in 5% the larvae proved infective to mice. Of 1,500 pigs 0.8% were found to be infected. R.T.L.

4—American Journal of Public Health.

- a. WRIGHT, W. H., 1939.—“Studies on trichinosis. XI. The epidemiology of *Trichinella spiralis* infestation and measures indicated for the control of trichinosis.” 29 (2), 119-127.

(4a) Routine examinations of 3,000 diaphragms from hospital cases in U.S.A., unassociated with clinical or anatomical diagnoses of trichinosis, showed 17% to be positive for *Trichinella spiralis*. The chief source of human trichinosis would appear to be swine fed on slaughterhouse offal and swine fed on uncooked garbage. The rôle of the rat has been greatly over-emphasized. The authors suggest that the control of garbage feeding by the licensing and supervision of garbage feeding plants is a much more feasible and practical plan for the control of trichinosis than the costly and inchoate methods at present adopted in the U.S.A. R.T.L.

5—American Journal of Tropical Medicine.

- a. SAWITZ, W., TOBIE, J. E. & KATZ, G., 1939.—“The specific gravity of hookworm eggs.” 19 (2), 171-179.
- b. McNAUGHT, J. B., 1939.—“The diagnosis of trichinosis.” 19 (2), 181-192.

(5a) Experiments by Sawitz, Tobie & Katz show that the specific gravity of living eggs of *Necator americanus* may, for practical laboratory purposes, be taken as 1.055. It is pointed out that the results obtained might have been influenced by the action of the chemical solution used and might not, therefore, give the true density of the hookworm eggs. R.H.H.

6—Annales d'Hygiène Publique, Industrielle et Sociale.

- a. GARIN, C. & ROMAN, 1939.—“Prophylaxie de l'ankylostomose des mineurs dans le bassin de la Loire.” 17 (2), 56-66.

7—Annales de Médecine et de Pharmacie Coloniales.

- a. LAVIER, G., 1939.—“La pathologie des bilharzioses à *Schistosoma haematobium* et *S. mansoni* à la lumière des travaux récents.” 37 (1), 5-26.

8—Annales de Parasitologie Humaine et Comparée.

- a. COUTELEN, F., LECROART, D. & COCHET, G., 1939.—“Sur la réceptivité de la souris blanche à l'échinococcose secondaire expérimentale, par inoculation intra-péritonéale de sable hydatique d'hydatides échinococciques du cheval.” 17 (1), 4-11.
- b. ROMAN, E., 1939.—“Sur l'infestation des rongeurs par l'*Hymenolepis nana* de l'homme.” 17 (1), 12-16.
- c. AZIM, A., 1939.—“Note sur *Microcotyle cephalus* n. sp. ectoparasite des arcs branchiaux de *Mugil cephalus*.” 17 (1), 17-20.
- d. CHOW, C. Y., 1939.—“Notes sur quelques nématodes de l'Indochine française.” 17 (1), 20-31.
- e. AZIM, A., 1939.—“Helminthes parasites des chiens et des chats en Egypte.” 17 (1), 32-36.
- f. COUTELEN, F., CALLOT, J. & DESPORTES, C., 1939.—“Réceptivité de l'écureuil (*Sciurus vulgaris*) et du ragondin (*Myocastor coypus*) à l'échinococcose secondaire expérimentale.” 17 (2), 162-166.
- g. ROMAN, E., 1939.—“Adénome pylorique chez un campagnol parasité par *Capillaria muris sylvatici*.” 17 (2), 167-169.
- h. PAVLOV, P., 1939.—“Méthode commode pour la recherche des métacercaires de *Brachylemus* dans les organes des mollusques terrestres (*Helicella*).” 17 (2), p. 174.

(8a) Coutelen, Lecroart & Cochet injected 34 white mice intraperitoneally with hydatid sand from hydatids from a horse, and obtained 22 positive results, of which 2 are photographically illustrated. The mice lived from 3 to 563 days after injection, 15 surviving more than 1 month. The number and size of cysts produced in a given time depend not merely on the quantity of scolices used, but largely on individual variations among the mice. B.G.P.

(8b) Roman has successfully transmitted the human strain of *Hymenolepis nana* to white mice. They were examined 4 days after infection and in a

single mouse (25%) there were found developing cysticerci in the villi. They were large cellular masses, divided into 2 regions, one of which was becoming vacuolated. P.A.C.

(8c) Azim describes *Microcotyle cephalus* n. sp. from the gill arches of *Mugil cephalus*, a common fish of lakes and river estuaries in Egypt. The parasite is distinguished from *M. mugilis* by having only 17 pairs of caudal suckers and by the incomplete armature of the genital aperture. E.M.S.

(8d) Thirteen species of nematodes are identified from French Indo-China. Of these *Subulura forcipata*, *Ascaris ovis* and *Contracaecum micropapillatum* are annotated. A new genus with *Onchocerca bambusicolae* as type is named *Houdemerus*, and a second species *H. tonkinensis* n. sp. from *Ardeola bacchus* is described and illustrated. The genus *Paramicipsella* n. g. is created for *P. brevicaudata* n. sp. from *Athene cuculoides*. It differs from the genus *Micipsella* in having a short tail in both sexes; the bosses are arranged in 8 rows and the preloacal papillae number 3 only. R.T.L.

(8e) Thirty-six helminths are listed from dogs and cats in Egypt. Of these 19 are trematodes, 7 are cestodes, 8 are nematodes and 2 are acanthocephala. No new forms are recorded. R.T.L.

(8f) Coutelen and his collaborators have successfully infested *Sciurus vulgaris* and *Myocastor coypus* with hydatid cyst. They were unable to infect *Dasyprocta agouti* although this has been recorded as a natural intermediate host. P.A.C.

(8h) The snails are removed entire from their shells, cut into small pieces on a fine metal sieve and ground fine with a pestle. The sieve is then placed in the top of a conical glass jar, and physiological saline poured through till the bottom of the sieve is submerged. The contents of the sieve are stirred and shaken for about half an hour, when the metacercariae can be pipetted up from the bottom of the jar. E.M.S.

9—Annales de la Société Belge de Médecine Tropicale.

- a. DUBOIS, A. & FORRO, M., 1939.—“Contribution à l'étiologie de l'éléphantiasis congolais. (Le rôle de *O. volvulus* étudié au Nepoko.” 19 (1), 13-21.
- b. DUBOIS, A., VITALE, S. & BIRGER, C., 1939.—“Contribution à l'étiologie de l'éléphantiasis congolais. (Région de Betongwe-Chefferie Medjeje).” 19 (1), 27-31.

(9a) Dubois & Forro have investigated the theory that elephantiasis in Congo is caused by *O. volvulus*. Their observations at Nepoko indicated that the presence of *O. volvulus* was a favourable factor in elephantiasis (especially of the genital organs), but that it was not the primary cause. J.J.C.B.

(9b) Dermal microfilariae are of particularly common occurrence in cases of elephantiasis in Betongwe. *Mf. volvulus* is fairly frequent in genital elephantiasis while *Mf. streptocerca* predominates where the lower limbs are affected. From the facts and figures obtained, however, it could not be concluded that these parasites were acting favourably or unfavourably in the causation of the disease. J.J.C.B.

10—Annals of Tropical Medicine and Parasitology.

- a. SOUTHWELL, T. & LAKE, F., 1939.—“On a collection of Cestoda from the Belgian Congo. With an introduction by Jacques Schwetz.” 33 (1), 63-90.

(10a) A large number of cestodes from wild animals in the Belgian Congo are identified. A number of known forms are annotated. Of these interest attaches to *Raillietina madagascariensis* (Davaine, 1870) which is reported from the rat *Mastomys coucha*. Four forms are described as new, viz., *Raillietina permista* n. sp. from *Campethera permista permista*, *R. bomensis* n. sp. from *Melanobucco bidentatus friedmanni*, *Hymenolepis varicanthos* n. sp. from *Ibis ibis* and *Oligorchis kwangensis* n. sp. from *Galachrysia nuchalis nuchalis*. R.T.L.

11—Archiv für Schiffs- und Tropen-Hygiene.

- a. ERHARDT, A., 1939.—“Der Einfluss der Wasserstoffionenkonzentration unter aeroben und anaeroben Bedingungen, des osmotischen Druckes und der Temperatur auf die Lebensdauer von *Opisthorchis* in vitro.” 43 (1), 15-19.
- b. MOLSER, H., 1939.—“*Filaria perstans*.” 43 (3), p. 130.

(11a) *Opisthorchis tenuicollis*, which is particularly suitable for studies on viability *in vitro*, survived under anaerobic conditions, for an average of 18 days in Ringer's solutions of pH ranging from 5.9 to 6.3. Under aerobic conditions there was a second maximum of 18.3 days at pH 7.6. The worms were but slightly sensitive to changes of osmotic pressure and to fall of temperature. R.T.L.

(11b) A continuous fever appears to be associated in some cases with *Filaria perstans* infection. Methylene blue in 1% solution given intravenously in doses of 2 c.c., increased every 4 days by 2 c.c. up to 10 c.c. in one injection, decreased the temperature, headaches, exhaustion and pain in the limbs, and the microfilariae could no longer be detected in the blood. R.T.L.

12—Archives de l'Institut Pasteur de Tunis.

- a. BALOZET, L. & CALLOT, J., 1939.—“Trématodes de Tunisie. 3. Superfamille Heterophyoidea.” 28 (1), 34-63.

(12a) Twelve known species of Heterophyidae are recorded from Tunis for the first time. The list includes *Heterophyes heterophyes* which has not before been reported from Tunis but occurs as a natural infection in the cat, which also harbours *H. dispar* and *H. aequatis* and *Ascocotyle italica*. R.T.L.

13—Archives of Pathology.

- a. ÇAMBEL, P., 1939.—“Rare localizations of hydatid disease in Turkey: report of a case of plurivisceral echinococcosis.” 27 (3), 419-423.

14—Archivio Italiano di Scienze Mediche Coloniali e di Parassitologia.

- a. CASTELLANI, A. & ACANFORA, G., 1939.—“Cisticercosi e pseudocisticercosi luetica.” 20 (1), 7-28.

15—Boletim Biológico.

- a. FREITAS, J. F. TEIXEIRA DE & LENT, H., 1939.—“Novo genero de helmintos parasitos de roedores (Nematoda: Filarioidea).” 4 (1), 14-18.
- b. LENT, H. & FREITAS, J. F. TEIXEIRA DE, 1939.—“Pesquisas helmintológicas realizadas no Estado do Pará. VII. Trematoda. Paramphistomoidea.” 4 (1), 82-86.
- c. FONSECA, F. DA, 1939.—“Novo trematoide parasita da galinha, *Brachylaemus fleuryi* sp. n. (Brachylaemidae. Fascioloidea). Nota prévia.” 4 (1), 114-116.

(15a) Freitas & Lent erect *Molinema* n.g. to contain Molin's *Filaria diacantha* (type) and *F. bifida* (both 1858), and also the *Dipetalonema travassosi* of Artigas & Pacheco (1933). The new genus is defined, and Molin's two species are redescribed from new material in Brazilian rodents. B.G.P.

(15b) Lent & Freitas redescribe *Nematophila grande* (Diesing) Travassos, and give an illustrated description of *Halltrema avitellina* n. g., n. sp. (Cladorchinae), both collected from the intestine of *Podocnemis expansa* in Pará. As described by Travassos, they found *N. grande* consistently parasitized by the nematode *Atractis trematophila* which, however, was not seen in *H. avitellina*. In the latter the genital sucker is post-furcal, and no yolk glands could be found even after dissection. B.G.P.

16—Boletín del Ministerio de Sanidad y Asistencia Social.

- a. SCOTT, J. A., 1939.—“Las helmintiasis en Venezuela. Informe del progreso obtenido en su estudio desde setiembre de 1937 hasta el 31 de agosto de 1938.” 4 (1), 85-87.

17—British Medical Journal.

- a. VAN SOMEREN, V. D., 1939.—“The treatment of trichinosis. A review of methods.” Year 1939, 1 (4077), 376-381.
- b. RUSKIN, L., 1939.—“Extradural hydatid cysts producing paraplegia.” Year 1939, 1 (4080), 560-561.

(17a) A review of methods of treatment of trichinosis shows that mechanical (purgation and radium therapy), and most chemotherapeutic measures are of little value in human cases. Use of immune serum may combat the toxæmia, and the administration of the commercial preparations “Carvasept” and “Butolan” may be of value for killing reproductive adults in the intestine. Intravenous injections of gluco-calcium have given favourable results in the acute migratory phase, and 4 to 5 weeks after infection calcification of encysted larvae may be hastened by use of a vitamin D-containing substance with a bland organic calcium salt, though this treatment may result in a dangerous metastatic calcification of other organs.

V.D.V.S.

18—Bulletin de la Société de Pathologie Exotique.

- a. JOYEUX, C. & BAER, J., 1939.—“ Sur quelques cestodes de Madagascar.” 32 (1), 39-43.
- b. ROUBAUD, E. & DESCHIENS, R., 1939. “ Destruction de larves infectieuses d'ankylostomes et d'anguillules intestinales par *Dactylella ellipsospora*.” 32 (2), 160-165.
- c. DESCHIENS, R., 1939.—“ Procédé simple de récolte des larves strongyloides de nématodes dans les coprocultures.” 32 (2), 165-169.
- d. MANCEAUX, A. & ALCAY, M., 1939.—“ A propos d'un cas de distomatose hépatique à *Fasciola hepatica*.” 32 (2), 169-172.
- e. ROUBAUD, E. & DESCAZEUX, J., 1939. “ Action de certains champignons prédateurs sur les larves des strongylidés du cheval.” 32 (3), 290-294.

(18a) (i) *Ophryocotyle bücki* n. sp. from *Lophotibis cristata* is differentiated from *O. herodiae*. (ii) For the first time in Madagascar a cysticercus has been found in sheep. The dimensions of the hooklets agree with those of *Cysticercus ovis*. The possibility of a plurality of species of *Cysticercus* in sheep is discussed. It is pointed out that *Cysticercus cellulosae* has been reported from a number of hosts besides the pig and may possibly infect sheep.

R.T.L.

(18b) Roubaud & Deschiens describe a method of culturing nematode-entrapping fungi on a nutrient gelatine, and the capture and destruction of infective larvae of *Ancylostoma duodenale* and *Strongyloides fülleborni* by the fungus *Dactylella ellipsospora*. They discuss the possible use of nematode-capturing fungi in reducing the numbers of nematodes by growing them on faeces or on soil contaminated with faeces.

T.G.

(18c) Deschiens describes a new method of recovering nematode larvae and eelworms from faecal cultures. A small funnel of filter-paper of 2 to 3 cm. capacity is placed in the middle of the culture so that the apex of its cone touches the bottom of the Petri dish and its turned-down upper edge lies on the surface of the culture fluid. The funnel is then half filled with distilled water. The nematodes in the culture medium migrate into the funnel via its upper edge or by penetrating the paper, and are withdrawn in clean condition from the funnel by means of a pipette.

J.J.C.B.

(18e) Roubaud & Descazeaux have studied the capability of the following nematode-ensnaring fungi, *Dactylella bembicodes*, *Arthrobotrys oligospora* and *Dactylella ellipsospora*, in capturing and destroying the infective larvae of various horse strongyles. All three fungi can capture such larvae but *D. ellipsospora* is much less efficient than the other two.

T.G.

19—Calcutta Medical Journal.

- a. BASU, M. N., 1939.—“ Filariasis : a review.” 35 (2), 114-129.

(19a) This review deals with filariasis under the following heads : (i) Species of *Filaria* : 19 are listed. (ii) Mosquito carriers, in 17 of which there is complete development and in 25 partial development. (iii) Antigen test : (a) non-susceptible cases (b) moderately susceptible cases (c) highly susceptible cases. (iv) Methods of detecting the microfilaria in the blood. (v) Symptoms. (vi) Public health aspect of filariasis. (vii) Treatment.

R.T.L.

20—Canadian Journal of Comparative Medicine.

- a. BROWN, J. C., 1939.—“Control of parasitism in sheep in general practice.” 3 (1), 21-22.
- b. PARNELL, I. W., 1939.—“Some notes on the chemical control of the free-living stages of bursate nematodes.” 3 (3), 84-87.

(20a) Brown recommends for the treatment of parasites in sheep that the whole flock be treated medicinally at frequent intervals. A diagram is given of a temporary structure that should be erected to aid dosing. The need is stressed of a holding yard for treated animals and of a temporary pasture where the animals can be held before being returned to permanent pasture to await their next treatment. J.W.G.L.

(20b) Parnell states that as yet no chemical can be recommended for use against sclerostome larvae on pastures or in stables. The most effective disinfectant is oxyquinoline sulphate which is twice as effective as phenol or formalin, but its excessive cost makes its use impracticable. Urine or chemical fertilizers may be used for middens. R.T.L.

21—Canadian Journal of Research. Section D. Zoological Sciences.

- a. HASTINGS, R. J., 1939.—“The biology of the meadow nematode *Pratylenchus pratensis* (de Man) Filipjev 1936.” 17 (2), 39-44.

(21a) Hastings has studied the life-cycle of *Pratylenchus pratensis* parasitic in the roots of oat seedlings. He finds that adult males and females as well as all larval stages can invade roots, that the life-cycle is completed in 54 to 65 days, and that the species is very sensitive to desiccation, as no living worms were obtained from oat roots which had become dry. Treatment of infected oat roots in hot water at 120°F. for 10 minutes was sufficient to kill the worms. T.G.

22—Chinese Medical Journal.

- a. FENG, L. C. & HOEPLI, R., 1939.—“Attempts to immunize rats and mice against *Cysticercus fasciolaris*.” 55 (1), 45-54.
- b. HU, S. M. K., 1939.—“Preliminary observations on the effects of filarial infection on *Culex pipiens* var. *pallens* Coq.” 55 (2), 154-161.

(22a) Feng & Hoeppli have given subcutaneous injections of emulsions prepared from *Cysticercus fasciolaris* to rats and mice in an endeavour to stimulate a resistance to infection with onchospheres of *Taenia taeniaeformis*. Two strains of mice were used, one of which was naturally more resistant to infection. They were unable to show that any resistance had been developed, for the number and size of the cysts were similar in treated and non-treated animals. P.A.C.

(22b) In a batch of *Culex pipiens* var. *pallens* experimentally fed on cases of *Filaria bancrofti*, those which proved negative or harboured few microfilariae survived the longest. During the incubation period infection had little effect on the mosquitoes. R.T.L.

23—Comptes Rendus des Séances de l'Académie des Sciences.

- a. ROUBAUD, E & DESCHIENS, R., 1939.—“ Capture de larves infectieuses de nématodes pathogènes par des champignons prédateurs du sol.” 208 (4), 245-247.
- b. COMANDON, J. & FONBRUNE, P. DE, 1939.—“ De la formation et du fonctionnement des pièges de champignons prédateurs de nématodes. Recherches effectuées à l'aide de la micromanipulation et de la cinématographie.” 208 (4), 304-305.

(23a) Roubaud & Deschiens show that the two nematode-entrapping fungi, *Arthrobotrys oligospora* and *Dactylella bembicodes*, when grown on a nutrient medium and supplied with larvae of *Strongyloides fülleborni* and *Ancylostoma duodenale*, produce their special organs of capture, entrap these worms and destroy them. They ask whether the partial control of the larval stages of these two parasitic worms could not be effected by sowing the appropriate fungi in the galleries of mines or on faecal slimes, etc. T.G.

(23b) Comandon & Fonbrune give a brief account of their researches on the production of snares by 5 species of nematode-entrapping fungi under appropriate stimuli, i.e., the actual presence of nematodes in the cultures, or a water extract of the medium in which the nematodes have lived. [See Helm. Abs., Vol. VII, Nos. 318 e, f & g.] T.G.

24—Comptes Rendus des Séances de la Société de Biologie.

- a. GALLIARD, H., 1939.—“ Unicité ou pluralité des *Strongyloides*.” 130 (5), 413-416.
- b. MACHEBOEUF, M. & MANDOUL, R., 1939.—“ A propos de la toxicité des extraits d'*Ascaris*.” 130 (10), 1032-1034.
- c. MANDOUL, R., 1939.—“ Étude comparative de la toxicité des extraits d'*Ascaris* et de *Taenia*.” 130 (10) 1035-1036.

(24a) Galliard discusses the literature dealing with the specificity of the species of the genus *Strongyloides*. As a result of his work, he supports Sandground's view that the man and the dog strains constitute the one species. The differences in the free-living periods of their life-cycles do not, in his opinion, necessitate the formation of two separate species. W.P.R.

(24b) Macheboeuf & Mandoul have shown that the guinea-pig receives a fatal shock by the intravenous injection of an extract of *Ascaris megaloccephala*. The toxic substance is soluble in trichloroacetic acid and is not dialysable. This latter fact suggests that a heavy molecule is involved and is not related to the amines such as histamine nor to the proteins in albumen or the bacteria. P.A.C.

(24c) Mandoul finds that extracts of *Moniezia expansa* contain no substance toxic to guinea-pigs and capable of causing a shock. Such an active substance as is found in *Ascaris megaloccephala* can be isolated from the coelomic fluid and very readily from the tissues by means of trichloroacetic acid. P.A.C.

25—Cornell Veterinarian.

- a. BAKER, D. W., 1939.—“Survival of worm parasite infection on New York State pastures.” 29 (1), 45-48.

(25a) Gastro-intestinal helminths of sheep and cattle are shown by Baker to remain viable on pasture for periods of at least 21 and 9 months respectively. Contaminated pastures were rested and subsequently grazed by worm-free lambs and calves. J.W.G.L.

26—Deutsche Medizinische Wochenschrift.

- a. MOLLOW, W., 1939.—“Echinokokkenkrankheit.” 65 (8), 293-296.
b. FIEBIGER, W. & TEMPEL, 1939.—“Zur Bekämpfung der *Taenia saginata*. Ein Beispiel für die notwendige Zusammenarbeit von Human- und Veterinärmedizin.” 65 (11), 422-423.

(26b) In this pair of brief articles, on the necessity for medical and veterinary co-operation in controlling *Taenia saginata*, Fiebiger stresses from the medical side the importance of adequately destroying tapeworms expelled by vermifuges. From the prevention aspect it is not satisfactory to flush the expelled tapeworm into the sewer: rather should it be burnt.

The same point is made by Tempel, who also touches upon the possibility of farmers keeping cattle away from sewage-polluted foodstuffs, and briefly describes the meat-inspector's part in prevention. B.G.P.

27—Deutsche Tierärztliche Wochenschrift.

- a. THOMAS, K., 1939.—“Die Beziehungen zwischen der Schweinefinne und dem Skorbut des Menschen. (Eine medizinische Streitfrage um 1594).” 47 (7), 109-111; (9), 141-142.
b. DUNGAL, N., 1939.—“Jaagsiekte und die sogenannte Strongylus-Adenomatose der Lunge des Schafes. Gibt es Jaagsiekte in Deutschland?” 47 (12), 178-182.

(27a) Thomas gives German translations from the Latin texts of J. J. Albert and S. Albert, illustrating the fact that human scurvy and cysticerciasis in pigs were regarded, at the end of the 16th century, as the same disease. [The texts are of interest, possibly, to medical and veterinary historians.]

B.G.P.

(27b) Dungal finds that a chronic adenomatous lung disease, epizootic in sheep in Iceland, is apparently the same entity as South African “Jaagsiekte” and is not (as was formerly supposed) due to lungworm invasion [see also *Helm. Abs.*, Vol. VII, Nos. 51a & b].

B.G.P.

28—East African Medical Journal.

- a. HARLEY-MASON, R. J., 1939.—“Symposium on onchocerciasis in East Africa. Filarial blinding in Kenya.” 15 (11), 363-377.
b. GIBBINS, E. G., 1939.—“Symposium on onchocerciasis in East Africa. Simuliidae and onchocerciasis in Uganda.” 15 (11), 378-384.

(28a) Harley-Mason records in detail 3 cases of filarial blinding in Europeans in Kenya. In two of these skin examinations for *Onchocerca*

larvae were positive; in the third the onchocercal origin of the eye trouble is inferred. It is believed that these are the first cases of filarial blinding to be described in Kenya.

J.J.C.B.

(28b) Gibbins presents a synopsis of the present state of knowledge concerning Simuliidae and onchocerciasis in Uganda, with particular reference to the breeding habits of 6 species of *Simulium* which are known to bite man.

J.J.C.B.

29—Farming in South Africa.

- a. MÖNNIG, H. O. & COLES, J. D. W. A., 1939.—“Parasites of fowls.” 14 (154), 25-27, 30.
- b. MÖNNIG, H. O., 1939.—“Worms in sheep. Different types and their control.” 14 (156), 107-114.

(29a) In this popular article Mönnig & Coles deal mainly with the treatment and control of the internal and external parasites of fowls. Carbon tetrachloride and tetrachlorethylene are considered to be efficacious against worms, but the cost of frequent treatment and of the eradication of intermediate hosts on the runs might be so great that farmers are urged to consider the adoption of the intensive system of poultry husbandry in order to combat worms.

D.O.M.

(29b) Mönnig gives a comprehensive popular account, for the use of sheep farmers, of the life-history, diagnosis, treatment and control of the worms found to infest sheep in South Africa.

J.W.G.L.

30—Geneeskundig Tijdschrift voor Nederlandsch-Indië.

- a. HORST, G. A. VAN DER & EERKENS, J. W., 1939.—“Schistosomiasis japonica en primair levercarcinoom.” 79 (3), 155-162.
- b. SANDGROUND, J. H., 1939.—“Creeping eruption in the Netherland East Indies caused by the invasion of the larva of *Ancylostoma braziliense*.” 79 (13), 805-810.

(30b) Creeping eruption is due to *Ancylostoma braziliense*, reported to be prevalent in Batavia, more frequently in children than in adults. Typical cases have been noted in Chinese and Javanese as well as in Europeans. Sand play-boxes are a common source of infection and cats use these for defaecation. The use of saturated salt solution to sterilize the sand is recommended.

R.T.L.

31—Indian Journal of Medical Research.

- a. FERNANDO, P. B., D'SILVA, M., STORK, G. K. B. & SINNATAMBY, G. R., 1939.—“Tetrachlorethylene in the treatment of hookworm disease, with special reference to toxicity.” 26 (3), 759-783.

(31a) Tetrachlorethylene is most effective against hookworm in man in a dose of 8 c.c. This dose has no appreciable toxic action on the cardiovascular, respiratory, hepatic or renal organs. In a few cases 6 c.c. have produced temporary symptoms of faintness and weakness. Doses of 4 c.c. to 5 c.c. may be safely given to adults and two such doses at an interval of ten days will cure severe infections. The drug is stated to be a very valuable one for mass treatment.

R.T.L.

32—Journal of Agricultural Research.

- a. BARRONS, K. C., 1939.—“Studies of the nature of root knot resistance.” 58 (4), 263-271.

(32a) It has been assumed by previous writers that resistant plants actually resist the entrance of nematode larvae. Barrons finds that as many larvae of *Heterodera marioni* enter the rootlets of resistant as of susceptible varieties. The hypothesis is proposed that root knot resistance is due to substances synthesized by the plant which counteract the effect of the salivary secretions of the larvae in inducing giant cell response. The phenomenon of host specialization may be due to genetic differences in the chemical nature of the salivary secretions. Resistant plants may be superior to susceptible plants as trap crops, for larvae which enter cannot reproduce. R.T.L.

33—Journal of the American Medical Association.

- a. SIMPSON, V. E., 1939.—“Strongyloidiasis.” 112 (9), 828-833.
 b. LAWSON, T. C., 1939.—“Echinococcus cysts of the liver of fifty-six years' duration.” 112 (14), 1331-1333.

(33a) Simpson discusses the pathogenicity, distribution, life-history, clinical aspect and treatment of strongyloidiasis in man. It is stated that strongyloidiasis is more common than is generally believed by the medical profession. Diagnosis is accomplished by the finding of the parasites, larvae or ova in the duodenal contents or faeces. On the basis of 9 cases iodine was found to be the best treatment; 4 c.c. compound solution of iodine was introduced into the duodenum on alternate days until the patient became negative to examination. J.W.G.L.

34—Journal of the American Veterinary Medical Association.

- a. BEAUDETTE, F. R., 1939.—“Flukes in the respiratory tract of ducks.” 94 (1), p. 44.
 b. ROBERTS, H. B. & WAGNER, C. C., 1939.—“Treatment of intestinal parasites with hexylresorcinol.” 94 (3), 230-231.
 c. LO, C. S., 1939.—“Two fatal cases of *Haemonchus contortus* infestation in wild animals.” 94 (3), p. 237.
 d. LANDSBERG, J. W., 1939.—“Hookworm disease in dogs.” 94 (4), 389-397.
 e. EMMEL, M. W., 1939.—“Sulfured soil for poultry yards.” 94 (4), 409-410.

(34a) In New Jersey *Typhlocoelum cymbium* occurred in the trachea of 3 out of 13 Pintail ducks, *Dafila acuta*. Specimens of *Epomidiostomum uncinatum* in Mallard ducks were associated with ulcerations of the gizzard, and in the small intestine *Profilicollis botulus* was found. R.T.L.

(34b) Roberts & Wagner report on the successful treatment of three chimpanzees infested with *Strongyloides stercoralis* by the use of hexylresorcinol. The chimpanzees were first anaesthetized and 5 pills of caprokol each containing 0.2 g. of hexylresorcinol then administered to each in a capsule. The dead worms were passed shortly afterwards and recovery of normal health was very rapid. K.S.

(34c) Lo reports on the death of a token (*Budorcas tibetanus*) and of a blue sheep. In both cases death followed inappetence and a sub-normal temperature. Post-mortem examination revealed anaemia and the fourth stomachs to be swarming with *Haemonchus contortus*. The numbers of these worms present are not stated. K.S.

(34d) Landsberg points out the wide distribution of *Ancylostoma caninum* and the high percentage of dogs infected in the United States. A comprehensive work incorporating many references to the literature on the subject deals with the description, diagnosis and life-cycle of the parasite and the pathological lesions that may be set up. The anaemia in hookworm cases is considered to be due purely to the loss of blood and this may readily be treated by medication with iron and ammonium citrate. The disease may be acute or chronic. Suggestions for treatment are given and susceptibility and control discussed. J.W.G.L.

(34e) Ground mined sulphur graded 90% through 80-mesh screens is a flour about half the price of commercial flowers of sulphur. It is broadcast over the surface of the soil of poultry yards at the rate of 800 lb. per acre (or 1.9 lb. per 100 sq. ft.). Through the action of soil bacteria sulphuric acid is produced. It takes from 2 to 2½ months to produce the maximum acidity of 2.0 to 2.2 pH in the surface 3 inches of soil; one application is necessary yearly. The increased acidity results in the disappearance of all the intermediate hosts of poultry tapeworms whose life-cycle is associated with the soil, while the life-cycle of the roundworm of poultry is apparently retarded. R.T.L.

35—Journal of the Council for Scientific and Industrial Research. Australia.

- a. GORDON, H. McL. & WHITLOCK, H. V., 1939.—“A new technique for counting nematode eggs in sheep faeces.” 12 (1), 50-52.

(35a) A special chamber slide has been devised by Whitlock for the estimation of nematode eggs in sheep faeces. A new technique combining sampling and flotation methods with the use of this special slide is described, and it is claimed that the time required for the examination of each sample is reduced to 2 minutes. R.T.L.

36—Journal of the Egyptian Medical Association.

- a. GAZAYERLI, M. E., 1939.—“Unusual site of a schistosome worm in the circumflex branch of the left coronary artery.” 22 (1), 34-37.

37—Journal of Helminthology.

- a. BUCKLEY, J. J. C., 1939.—“Observations on *Gastrodiscoides hominis* and *Fasciolopsis buski* in Assam.” 17 (1), 1-12.
- b. VAN SOMEREN, V. D., 1939.—“The bone marrow in trichinosis of the rat.” 17 (1), 13-20.
- c. CLAPHAM, P. A., 1939.—“On the presence of hooks on the rostellum of *Hymenolepis microps*.” 17 (1), 21-24.
- d. BUCKLEY, J. J. C., 1939.—“On a new amphistome cercaria (*Diplocotylea*) from *Planorbis exustus*.” 17 (1), 25-30.

- e. SMEDLEY, E. M., 1939.—“Experiments on the use of isothiocyanates in the control of the potato strain of *Heterodera schachtii* (Schmidt).” 17 (1), 31-38.
- f. SMALL, T., 1939.—“On the first outbreaks of potato eelworm (*Heterodera schachtii* Schmidt) in Jersey.” 17 (1), 39-40.
- g. O'BRIEN, D. G., GEMMELL, A. R., PRENTICE, I. W. & WYLIE, S. M., 1939.—“Field experiments in Ayrshire on control of *Heterodera schachtii* by the use of chloroacetates.” 17 (1), 41-50.
- h. EDWARDS, E. E., 1939.—“Field tests on the value of calcium chloroacetate for controlling the potato-sickness associated with the root eelworm, *Heterodera schachtii*.” 17 (1), 51-60.

(37a) *Fasciolopsis buski* and *Gastrodiscoides hominis* were found commonly in children in Kamrup District, Assam. The egg and miracidium of *G. hominis* are described. *Segmentina trochoideus* is recorded as a new intermediate host of *F. buski*. The molluscs and edible water plants of infected localities are listed.
J.J.C.B.

(37b) In acute trichinosis produced experimentally in rats the bone marrow shows myeloid hyperplasia, the fat cells having all disappeared and dilated sinusoids being a prominent feature between the closely packed leucoblastic tissue. Basophiles and basophil myelocytes are reduced. The total of eosinophiles and eosinophil myelocytes is increased, formed eosinophiles are generally more numerous than myelocytes in the marrow. Premyelocytes are increased especially in those animals with a high blood eosinophilia. After the *Trichinella* larvae have encysted the marrow still shows the effect of stimulation although its architecture is again normal. Neutrophil myelocytes are still more numerous than neutrophiles, and the eosinophiles are also above normal. In other cases, however, an abnormally high neutrophil blood count persists although the eosinophiles have returned to normal.
R.T.L.

(37d) Buckley describes a new amphistome cercaria, *Cercaria fraseri* n. sp., having pharyngeal pouches, from *Planorbis exustus* in Assam. Its possible relationship to *Homalogaster paloniae* was investigated experimentally, but without success.
J.J.C.B.

(37e) Phenyl isothiocyanate is shown to be the most effective chemical of the isothiocyanate group in the treatment of potato eelworm. The cysts are killed by 24 hours immersion in a solution containing 0.001%, while in a pot experiment the application of 2 cwt. per acre gave complete control. In a field experiment 2 cwt. per acre gave a significant increase in yield, but control of the cyst population could not be demonstrated.
E.M.S.

(37g) O'Brien et al. describe experiments on the control of *H. schachtii* by the application to infected land of calcium chloroacetate and ammonium chloroacetate. These were applied at rates ranging from 2 to 8 and 3 to 6 cwt. per acre respectively. Increases in yield over control yields are recorded in all cases, and reductions in the percentage of roots infested by larvae were found in cases where such examinations were carried out. Phytocidal action of calcium chloroacetate extending for at least 3 weeks after application is noted, and there is some indication of residual effect on the eelworm in the second season. The effect on the nematode is to reduce or delay hatching; free larvae are not killed by concentrations up to 1% of calcium chloroacetate.
M.J.T.

(37h) Edwards describes 5 field experiments in which calcium chloroacetate was applied to soil infested with the potato strain of *Heterodera schachtii*. Dressings were applied at the rate of 3 cwt. and 5 cwt. per acre, 6 weeks before planting. Early growth was checked by the toxicity of the chemical, but subsequently better growth ensued on the treated than on the control plots, although there was evidence of "potato sickness" throughout. Increases of yield over yield of control plots ranged from 17.2 cwt. to 3 tons 0.3 cwt. per acre. Cyst counts showed that increases in the eelworm population of the soil occurred in the treated plots and was most marked in those cases which showed greatest increase of yield. M.J.T.

38—Journal of Parasitology.

- a. CORT, W. W., McMULLEN, D. B. & BRACKETT, S., 1939.—"A study of larval trematode infections in *Helisoma campanulatum smithii* (Baker) in the Douglas Lake region, Michigan." 25 (1), 19-22.
- b. UNDERWOOD, P. C. & HARWOOD, P. D., 1939.—"Survival and location of the microfilariae of *Dirofilaria immitis* in the dog." 25 (1), 23-33.
- c. CABLE, R. M. & WHEELER, N. C., 1939.—"Notes on three new species of cercariae belonging to the *Pleurolophocerca* group." 25 (1), 35-42.
- d. WHARTON, G. W., 1939.—"Studies on *Lophotaspis vallei* (Stossich, 1899) (Trematoda: Aspidogastridae)." 25 (1), 83-86.
- e. RANKIN, jr., J. S., 1939.—"*Cercaria pseudoburti* n. sp., a strigeid cercaria from western Massachusetts." 25 (1), 87-91.

(38a) *Helisoma campanulatum smithii* has been examined for cercariae over a period of 13 months, from Twin Lakes and from Bullfrog Lake. In the former *Macroderoides typicus* accounts for the majority of recorded infections, and in the latter *Alloglossidium corti*. E.M.S.

(38b) An uninfected dog was transfused with blood containing microfilariae of *Dirofilaria immitis*. Comparatively few appeared in the peripheral circulation but those which did so survived for more than 2 years. Some remained in the capillaries, others left the bloodstream altogether. No increase in size occurred during this period. Lane's hypothesis that artificially introduced microfilariae are removed and destroyed by the reticulo-endothelial system was not substantiated. While the macrophage system is activated by some type of immunological reaction and may destroy large numbers of microfilariae in a short time, such reactions are irregular and do not regularly influence microfilarial longevity or periodicity. R.T.L.

(38c) Cable & Wheeler have discovered 3 new species of cercariae in *Goniobasis semicarinata*, viz., *C. opacocarpa* n. sp., *C. semicarinatae* n. sp. and *C. constrictovesica* n. sp. They emphasize the diagnostic value of the behaviour of living specimens in dealing with this group. E.M.S.

(38d) *Lophotaspis vallei* becomes adult in the turtle, *Caretta caretta*. The larva is free-swimming and develops in the snail *Fasciolaria gigas*. The life-history forms a connecting link between aspidogastrids, which become adult in molluscan hosts, and other trematodes, which, developing in mollusca, attain maturity in vertebrates. R.T.L.

(38e) Bifid-tailed strigeid *Cercaria pseudoburti* n. sp. is described from *Limnaea (Pseudosuccinea) columella* in Massachusetts. R.T.L.

39—Journal of Tropical Medicine and Hygiene.

- a. HASSAN, A., 1939.—“The ultra-violet absorption spectra of sera in human schistosomiasis.” 42 (2), 17-18.
- b. DASSANAYAKE, W. L. P., 1939.—“A note on filariasis in the Southern Province, Ceylon, 1938.” 42 (4), 51-53.
- c. MAINZER, F., 1939.—“Reactional increase of the eosinophil proportion of the blood in schistosomiasis subsequent to antimony treatment: a phenomenon in support of the recognition of latent infection.” 42 (6), 86-89.
- d. CAWSTON, F. G., 1939.—“The importance of pathology and dispensing in schistosomiasis.” 42 (7), 98-99.

(39a) The greater intensity in the absorption curves of schistosomiasis sera is due probably to changes in the relative amount of serum proteins.

R.T.L.

(39b) *Microfilaria malayi* is the most predominant type of filarial infection in the Southern Province of Ceylon, and is mainly restricted to those areas in which tanks and seepage areas adjoin the villages. *Microfilaria bancrofti* is restricted to a part of Galle Town where facilities for the breeding of *Culex fatigans* abound. Genital symptoms are only associated with the *bancrofti* type of infection.

R.T.L.

40—Journal of the Washington Academy of Sciences.

- a. PRICE, E. W., 1939.—“North American monogenetic trematodes. III. The family Capsalidae (Capsaloidea).” 29 (2), 63-92.

(40a) Price completes his consideration of the Monopisthocotylea by reviewing the Capsalidae. Keys for the differentiation of the genera of the 4 subfamilies are given. To the known species *Capsala maccallumi* n. sp., *C. lintoni* n. sp. and *Capsaloides magnaspinosus* n. sp. are added.

R.T.L.

41—Lancet.

- a. KENAWY, M. R., 1939.—“Venous hum in bilharzial cirrhosis of the liver.” Year 1939, 1 (6032), 821-822.

42—Medical Journal of Australia.

- a. BEARUP, A. J. & MORGAN, E. L., 1939.—“The occurrence of *Hymenolepis diminuta* (Rudolphi, 1819) and *Dipylidium caninum* (Linnaeus, 1758) as parasites of man in Australia.” 26th Year, 1 (3), 104-106.

(42a) Three new cases of *Hymenolepis diminuta* and 2 cases of *Dipylidium caninum*, not hitherto recorded from Australia, are reported. *Hymenolepis nana* occurred in 0.2% and the large Taenias in 0.02% of 202,582 persons examined by the Hookworm Campaign between 1919 and 1924. *Taenia solium* is extremely rare in Australia and is absent from New Guinea and Papuan natives. *Dibothriocephalus latus* is also extremely rare but has been noticed in foreigners.

R.T.L.

43—Medizinische Klinik.

- a. HAMBURGER, F., 1939.—“Die Oxyurenneurose.” 35 (12), 369-370.

44—Nederlandsch Tijdschrift voor Geneeskunde.

- a. HEKKING, A. M. W., 1939.—“Een geval van infectie met *Clonorchis sinensis* (Cobbold).” 83. Jaarg., 2 (13), 1471-1474.

45—New Zealand Journal of Agriculture.

- a. GRAY, W. J., 1939.—“Internal parasites in sheep. Care in prevention of infection.” 58 (2), pp. 103 & 105.

(45a) Avoidance of overstocking, frequent changes of pasture and proper feeding are recommended for the control of internal parasites of sheep.

R.T.L.

46—New Zealand Medical Journal.

- a. LANE, C., 1939.—“Points in the diagnosis and prevention of *Ascaris* infection.” 38 (203), 23-26.

(46a) Lane shows that his D.C.F. (direct centrifugal floatation) technique is superior to Willis' direct gravity floatation technique for *Ascaris* and *Trichuris* eggs as well as for hookworm eggs. Whereas a salt solution of 1,150 specific gravity is the best for hookworm, for *Ascaris* and *Trichuris* eggs the solution must be saturated, preferably by boiling, and have an ascertained specific gravity of 1,200. While there is no evidence for, or against, the bored hole latrine as agent in the spread of *Ascaris* infection, attention is drawn to the possible rôle of cockroaches, which tend to breed in these latrines, as scatterers of the eggs.

R.T.L.

47—North American Veterinarian.

- a. ANON, 1939.—“Horse parasite control.” 20 (1), 23-24, 28.
b. BROWN, H. W., 1939.—“Observations on the dog heartworm, *Dirofilaria immitis*.” 20 (1), 49-55.

(47b) Blood and autopsy examinations of dogs for infection with *Dirofilaria immitis* by Brown showed that the percentage infected was 33.7% for Savannah, Georgia, 75% for a rural area near Savannah, 40.6% for Orange County, North Carolina, and 66.6% for Hopkins County, Kentucky. Long-haired dogs were slightly more frequently infected and carried a larger number of parasites than short-haired dogs. No infection was discovered in 20 cats examined from infected areas. Microfilariae were recovered from 8 out of 10 fleas (*Ctenocephalides felis*) parasitic on an infected dog, and it is therefore suggested that fleas may play some part in the transmission of the dog heart worm.

J.W.G.L.

48—Nuova Veterinaria.

- a. BACCI, I., 1939.—“Le alterazioni del sangue nei polli infestati sperimentalmente con ascaridi. (*Heterakis papillosa* ed *inflexa*).” 17 (3), 26-31.

(48a) Bacci has examined the changes in the blood of fowls experimentally infected with *Heterakis papillosa* and *H. inflexa*. Such infection provokes a profound anaemia with a decrease in the number of erythrocytes,

accompanied by anisocytosis, poikilocytosis and polychromatocytosis. At the same time there is a marked eosinophilia and pre-eosinophiles are always present. Thrombocytes are very abundant. P.A.C.

49—Nuovo Ercolani.

- a. CARTA, A., 1939.—“Ancora sulle alterazioni delle linfoghiandole portalì nella distomatosi epatica.” 44 (3), 97-104.

(49a) Carta finds that the 4 principal changes to be seen in mesenteric lymph nodes in hepatic distomiasis are: sinus catarrh, increase in the numbers of muscular fibrils in cortex and trabeculae, local lymphocytosis especially in the cortex, and infiltration of plasma cells in the medullary cords. There is also a multiplication of reticular cells containing a yellowish pigment which is negative to iron and fat tests. This pigment is insoluble in a number of organic solvents, but soluble in ethyl and more so in amyl alcohol; the latter solution gives the bile-pigment reaction with nitrous nitric acid, and in general Carta's tests appear to exclude the various blood pigments. Bile pigments would not be unexpected, he argues, in cirrhotic conditions. B.G.F.

50—Ohio Journal of Science.

- a. WILLIAMS, S. R., 1939.—“Variation in *Moniezia expansa* Rudolphi.” 39 (1), 37-42.

(50a) Williams describes multiplication of the genitalia in *Moniezia expansa* with incomplete delimitation of the segments. In what appeared to be 2 consecutive segments there were 2 complexes of genitalia on the left side, representing 3 complete sets. On the right side there was one normal set and a complex representing 2 sets of genitalia. P.A.C.

51—Phytopathology.

- a. CHESTER, K. S. & CRESS, M., 1939.—“Heat treatment of black locust for root-knot control.” [Abstract of a paper presented at the 29th Annual Meeting of the American Phytopathological Society.] 29 (1), 4-5.
- b. HOWARD, F. L., STARK, F. L. & SMITH, J. B., 1939.—“Chemical control of nematodes in tomato greenhouses.” [Abstract of a paper presented at the 29th Annual Meeting of the American Phytopathological Society.] 29 (1), p. 11.
- c. NEWHALL, A. G., 1939.—“Two new electrical devices for pasteurizing soil.” [Abstract of a paper presented at the 29th Annual Meeting of the American Phytopathological Society.] 29 (1), 18-19.
- d. SHAW, K. J., 1939.—“Effects of different dates of transplanting tobacco on the control of losses caused by *Heterodera marioni*.” [Abstract of a paper presented at the 29th Annual Meeting of the American Phytopathological Society.] 29 (1), p. 21.
- e. YOUNG, P. A., 1939.—“Chemical soil treatment to control *Fusarium lycopersici*, *Heterodera marioni*, and weeds.” [Abstract of a paper presented at the 29th Annual Meeting of the American Phytopathological Society.] 29 (1), p. 25.
- f. GEMMELL, A. R., 1939.—“The infection of potato roots by *Heterodera schachtii*.” 29 (3), 287-288.

(51a) Seedling black locust trees infected with root-knot were treated with hot water at temperatures from 116° to 124° F. for various times. Successful disinfestation without injury to the trees was obtained in 30 minutes at 118°, 120° and 122°, in 12 minutes at 120° and 122°, and in 5 minutes at 122°. Injury was caused by treatments at 124° for 5 minutes and more, while 116° for 30 minutes, 118° for 12 minutes, and 120° for 5 minutes did not eradicate the nematode. Heating to 120° F. for 30 minutes is said probably to be the most serviceable procedure. M.T.F.

(51b) Chloropicrin and carbon disulphide applied by direct injection proved superior to aqueous drenches and compared favourably with steam in the treatment of greenhouse soil infected with *Heterodera marioni*. Dosages of chloropicrin which delayed nematode infection until an extensive root system had developed were sufficient to produce normal yields of tomatoes. It is also noted that indicator crops could be effectively used to forecast nematode damage; that root development depended on soil treatment; and that nematode control was not necessarily directly proportional to the yield of fruit. M.T.F.

(51c) Newhall gives details of 2 types of electric steam sterilizers which he used for treating greenhouse soil. An end-point temperature of 60°C. was sufficient to control damping off, nematodes and most weed seeds. M.T.F.

(51d) No consistent difference was found over a period of 3 years in the percentage of severe root-knot caused by *Heterodera marioni* in tobacco transplanted early, medium or late in the summer. Early transplanting gave the greatest yield and value of tobacco per acre. M.T.F.

(51e) Young finds that chloropicrin injected into soil at 250 to 450 lb. per acre usually controls all or most of the *Fusarium lycopersici*, *Heterodera marioni* and weeds. Carbon bisulphide at 1,000 to 3,000 lb. per acre usually controlled nearly all *H. marioni*, but not *F. lycopersici* or weeds. 1,470 lb. per acre of lye, 1,200 lb. per acre of sodium cyanide or 2,000 lb. per acre of cyanamide did not control *H. marioni*. M.T.F.

(51f) Gemmell describes a method of estimating the intensity of disease caused by *Heterodera schachtii* in potatoes, by estimating the number of infected roots and by counts of larvae in stained roots. Lengths of root 0.5 inch, including the rootcap, are stained in 2% solution of iodine, in alcohol for 20 to 30 minutes, then decolourized in 90% alcohol until quite clear, cleared and mounted in clove oil, when contained larvae appear stained brown. For the first 4 months of growth the percentage of infested roots indicates intensity of disease; later, counts of larvae must be made as all roots are infested. Percentage infections estimated by this method are tabulated together with yield in tons per acre. M.J.T.

52—Policlinico (Sezione Pratica).

- a. CAMPORESI, L., 1939.—"Anguillulosi intestinale e biliare e sondaggio duodenale." 46 (3), 112-114.
- b. D'ALESSANDRO, G., 1939.—"Pneumonite allergica da puntura di cisti d'echinococco." 46 (11), 479-485.
- c. AUSTONI, M., 1939.—"Su di un caso di cisticercosi generalizzata grave." 46 (14), 627-643.

(52a) Camporesi's report of a case of strongyloidiasis is of special interest in that a duodenal sound was used for diagnosis and for introducing anthelmintics, and in that the nematodes had apparently invaded the bile ducts from the duodenum. Cholecystitis and duodenitis were alleviated by a course of thymol and turpentine and the worms were reduced in numbers, but they were not completely eliminated. B.G.P.

53—Poultry Science.

- a. WEHR, E. E., HARWOOD, P. D. & SCHAFFER, J. M., 1939.—“Barium antimonyl tartrate as a remedy for the removal of gapeworms from chickens.” 18 (1), 63-65.

(53a) Wehr, Harwood & Schaffer have treated 143 gapeworm-infested chickens with barium antimonyl tartrate and find it was more than 98% efficient, only 4 pairs of gapeworms being recovered at post-mortem examination. There were 48 control birds and these yielded 94 pairs of worms. The method of treatment was to dust the birds all over with the chemical after which it was inhaled automatically. P.A.C.

54—Proceedings of the Helminthological Society of Washington.

- a. DIKMANS, G., 1939.—“Two new nematodes (Trichostrongyloidea) from rodents.” 6 (1), 1-4.
- b. FOSTER, A. O. & ALICATA, J. E., 1939.—“Notes on parasites of horses in Hawaii.” 6 (1), 4-8.
- c. KRULL, W. H., 1939.—“On the life history of *Moniezia expansa* and *Cittotaenia* sp. (Cestoda: Anoplocephalidae).” 6 (1), 10-11.
- d. LINFORD, M. B., 1939.—“Attractiveness of roots and excised shoot tissues to certain nematodes.” 6 (1), 11-18.
- e. McINTOSH, A., 1939.—“A new microcoeliid trematode, *Furytrema komareki* n. sp., from a white footed mouse.” 6 (1), 18-19.
- f. OLSEN, O. W., 1939.—“The occurrence of the fluke *Plagiorchis potanini* Skrjabin, 1928, in Franklin's gull (*Larus pipixcans* Wagl.) in North America.” 6 (1), p. 20.
- g. OLSEN, O. W., 1939.—“The cysticercoid of the tapeworm *Dendrouterina mycticoracis* Olsen, 1937 (Dilepididae).” 6 (1), 20-21.
- h. PORTER, D. A., 1939.—“Effectiveness of the swine sanitation system in controlling swine stomach worms in the south.” 6 (1), 21-23.
- i. PRICE, E. W., 1939.—“A new genus and two new species of digenetic trematodes from a marine turtle.” 6 (1), 24-25.
- j. STEINER, G. & CHRISTIE, J. R., 1939.—“Nematodes observed on diseased rhizomes of ginger from Peru.” 6 (1), 26-29.
- k. SWANSON, L. E., 1939.—“A note on the parasite fauna of the Hawaiian Islands.” 6 (1), 29-30.
- l. THORNE, G., 1939.—“Notes on free-living and plant-parasitic nematodes, V.” 6 (1), 30-32.
- m. WEHR, E. E., 1939.—“New genera and species of Filarioidea. II. *Quadriplotriaena dolichodemus* n. gen., n. sp.” 6 (1), 32-33.

(54a) *Citellinoides zapodis* n. g., n. sp. from *Napeozapus insignis* resembles *Citellinema* but differs markedly in the bursa. *Murielus harpeticulus* n. g., n. sp. from *Ochotona princeps ventorum* bears a close resemblance to *Nematodirus* but has only a single female genital tube. R.T.L.

(54b) Twenty-seven species are listed from horses in Hawaii. Nineteen species belong to the Strongylidae. None are new. R.T.L.

(54c) Krull confirms Stunkard's discovery that the oribatid mites of the genus *Galumna* act as intermediate hosts for *Moniezia expansa*. The only species found infected was *G. emarginata* and of 286 specimens only 5 harboured cysticeroids. With these a lamb was experimentally infected. Three out of 5 domestic rabbits were found to be infected each with 2 immature *Cittotaenia* after being kept on a plot of grass where *G. emarginata* was present. R.T.L.

(54d) Linford describes direct observations on the behaviour of larvae of *Heterodera marioni* and both females and larvae of *Rotylenchus multicinctus*, *Pratylenchus pratensis* and *Aphelenchus avenae* in the presence of growing roots and excised plant tissues. The roots and tissues were observed in moist sand or soil to which large numbers of the nematodes had been added. *H. marioni* larvae were seen to congregate in the elongating region of the roots just behind the tip, avoiding the piliferous zone. The grouping was complete in 2 to 3 hours and larvae did not then move away from the root. Roots of *Portulaca oleracea*, *Vigna sinensis*, *Amaranthus gracilis*, *Cyperus rotundus*, *Erigeron albidus*, *Euphorbia hirta* and *Panicum barbinode* were all attractive, though the last three are highly resistant to root-knot under field conditions. *Drymaria cordata* was not attractive. *P. pratensis* and *R. multicinctus* group round the roots more slowly than *H. marioni* and avoid the elongating zone, collecting chiefly in the piliferous region. All three species are attracted to fresh wounds. *A. avenae* showed very little grouping. Pieces of green pineapple leaf, *Portulaca oleracea* stem and tomato petiole were attractive to *R. multicinctus*, and *H. marioni* larvae grouped strikingly round these and many other plant-tissues, but *A. avenae* was unresponsive. Tissues which caused no response in *H. marioni* and *R. multicinctus* at first, became attractive as decay set in. Reactions were in all cases more marked in sand than in soil, possibly because of adsorption of the attractive substances by soil colloids. Larvae of *H. marioni* concentrated round covered colonies of yeast growing on agar, but not round uncovered ones. It is suggested that this may be related to the anaerobic growth of the yeast. M.T.F.

(54e) *Eurytrema komareki* n. sp. is described from *Peromyscus gossypinus* gossypinus. It conforms with Bhalerao's subgenus *Lubens* but differs from the 3 species already placed in this subgenus in that the acetabulum is much larger than the oral sucker. R.T.L.

(54g) Minute cysticeroids with hooklets characteristic in size and shape of *Dendrouterina nycticoracis* were found in the gall bladder of the fish *Ameiurus melas*. This suggests that a water flea is probably the first intermediate host. R.T.L.

(54h) The incidence and percentage of heavy infestations with *Hyostrongylus rubidus*, *Physocephalus sexalatus* and *Ascarops strongylina* was markedly lowered when swine were raised in accordance with the swine sanitation system. R.T.L.

(54i) *Rhytidodoides intestinalis* n. g., n. sp. from the intestine and *R. similis* n. sp. from the gall bladder of *Chelone mydas* are described. In the

new genus the flukes are small and unarmed. The gonads are confined to the posterior body third. The yolk glands extend into the preacetabular zone. In other respects the characters are identical with those of *Rhytidodes*. R.T.L.

(54j) *Diploscapter coronatus* (Cobb, 1893), *Neocephalobus peruënsis* n. sp. and *Aphelenchoides hunti* Steiner, 1935 are added to the fauna of Peru. These species were found on diseased ginger rhizomes. *N. peruënsis* feeds on bacteria and *A. hunti* on fungi. The significance of *D. coronatus* has not been determined. *N. peruënsis* resembles *N. aberrans* but has only 3 lips while the 8 to 10 male papillae have a different arrangement. R.T.L.

(54k) Twenty-nine species of helminths are listed from domesticated animals in the Hawaiian Islands. *Stephanurus dentatus* occurs in wild but not in domesticated pigs. Three cases of *Fasciola gigantica* have come under Swanson's notice. R.T.L.

(54l) In the first of these two short notes Thorne describes and figures a new cephalobid nematode, *Panaerobolus incisus* n. g., n. sp., which was obtained from beneath the bark of a dead twig of the umbrella pine. In the second he discusses the habits of *Pratylenchus pratensis* which parasitizes the roots of a number of plants, including wheat, oats, barley, corn and cotton in U.S.A. He points out that parasitism within roots is not essential for reproduction since gravid females and larvae may be found in soil around roots. T.G.

(54m) *Quadriplotriaena dolichodemus* n. g., n. sp. was collected from the abdominal cavity of a magpie *Pica pica hudsonia* in Montana. A key is given differentiating the new genus from *Diplotriaena* and *Diplotriaenoides*. The new genus has 4 cuticular finger-like projections whereas the others have only two. R.T.L.

55—Proceedings of the Royal Physical Society of Edinburgh.

- a. BERTRAM, D. S., editor, 1939.—“The natural history of Canna and Sanday, Inner Hebrides: a report upon the Glasgow University Canna Expeditions, 1936 and 1937.” 23 (1), 1-71.

(55a) Five males of *Gordionus violaceus* were collected from different streams on Sanday. Regarding *Limnaea truncatula* it is stated that it occurred only in 3 places on Canna, being plentiful in Allt Thaligaridh, while *L. pereger* was abundant in all streams. *Limnaea truncatula* was restricted to water with a pH range of 7.3 to 7.7 and was absent from equally well aerated but poorly buffered waters in the vicinity. R.T.L.

56—Public Health Reports. Washington.

- a. CRAM, E. B. & NOLAN, M. O., 1939.—“Studies on oxyuriasis. XIX. Examinations of children in a private nursery school over an 18-month period.” 54 (14), 567-574.

(56a) Cram & Nolan report that examinations for pinworms made by the use of NIH swabs showed 55% of 106 children in a private nursery school in 1937 to be infected. A further examination of 34 people, relatives

and persons associated with the school, revealed 24% to be infected. The percentage of children found positive for pinworms was found to vary considerably during 12 months, but during a further 5 months, when treatment and strict control measures were in use, no new cases of infestation were discovered. This is seen clearly in graphical form. M.R.Y.

57—Rivista di Parassitologia.

- a. CARTA, A., 1939.—“L'identificazione del ciclo evolutivo del *Mesocestoides lineatus* provata sperimentalmente.” 3 (1), 65-81.

(57a) Carta administered by tube to dogs specimens of *Tetrathyridium baillieti* obtained from the peritoneal cavity and cysticercus forms obtained from the wall of the intestine of a dog. In both cases adult *Mesocestoides lineatus* resulted. The author is of opinion that the *Tetrabothrium* is merely an exceptional “abeyant” larval stage of the cysticercus, the scolex of which resembles that of the adult *Mesocestoides*. R.T.L.

58—Schweizer Archiv für Tierheilkunde.

- a. BORNAND, M., 1939.—“Observations sur quelques maladies parasitaires du gibier en 1937 et en 1938.” 81 (2), 65-70.
b. GALLI-VALERIO, B., 1939.—“Observations sur quelques maladies parasitaires et sur quelques intoxications des animaux domestiques et sauvages.” 81 (3), 91-108.
c. REHSTEINER, 1939.—“Trichinose nach Genuss von Hundefleisch.” 81 (4), 155-156.

(58a) Bornand reports briefly on the parasites found by him in game animals in Switzerland during 1937 and 1938. These include lungworms in chamois, ibex and roe-deer, whipworms in chamois and hedgehog, ascarids in a fox, and *Dicrocoelium* in hares. Marmots' faeces were free from the anoplocephaline eggs which were formerly commonly found. Bornand ascribes the death of game animals largely to parasites rather than to beasts of prey, which, in fact, perform a useful service in devouring animals dead or dying of parasites. B.G.P.

(58b) The observations of Galli-Valerio include brief notes on lungworm disease in sheep and ibex, helminths found in dogs and cats, *Cysticercus pisi-formis* in rabbits, a fatal enteritis in fowls due to *Ascaridia perspicillum*, flatworms in swans, roundworms in peacock and pheasants, *Syngamus trachea* in *Sterna perdix* (with other helminths) and *Perdix saxatilis*, and a note on the biology of *Zebrina detrita*, carrying *Dicrocoelium*. B.G.P.

(58c) Rehsteiner records 3 cases of trichinosis acquired by eating smoked dog-flesh in Switzerland. The source of infection of the dog is unknown. V.D.V.S.

59—Scottish Naturalist.

- a. CARRICK, R., 1939.—“Some parasites of birds and mammals from Canna.” No. 235, pp. 23-24.

(59a) From a sheep on the island of Canna off the West of Scotland Carrick obtained *Fasciola hepatica*, *Cysticercus tenuicollis*, *Bunostomum trigonocephalum* and from a rabbit *Passalurus ambiguus*. R.T.L.

60—South African Medical Journal.

- a. TE GROEN, L. J., 1939.—“In geval van Bilharzia endometritis met sware secundêre anemie.” 13 (4), p. 138.
- b. VAN ZYL, F. D. DU T., 1939.—“Hydatid choleperitoneum.” 13 (6), 203-207.

61—Taiwan Igakkai Zasshi.

- a. KINUGASA, M., 1939.—“Investigations on the incidence of lung fluke disease (*Paragonimus westermani*) in Sintiku Prefecture. I. On its incidence in primary school children in Sintiku Prefecture.” 38 (2), 277-288. [In Japanese: English summary pp. 288-289.]
- b. KINUGASA, M., 1939.—“On the treatment of *Clonorchis sinensis* with Fouadin.” 38 (2), 290-294. [In Japanese: English summary p. 294.]

(61a) In Formosa the Sintiku Prefecture is reputed to be the chief endemic centre for paragonimiasis. But of 46,322 Formosan school children only 0.64% showed eggs in the sputum. In certain schools, however, the percentage was 6.25. Infected children were generally wasted, 90% complained of cough, 30% of haemoptysis and blood-tinged sputum, 20% of pain in the chest. There was evidence of mental as well as physical deterioration. R.T.L.

(61b) Intramuscular injections with Fouadin proved successful in cases of infections with *Clonorchis sinensis* where Stibnal had failed. Two courses of 10 injections each at an interval of one year between the courses, reduced the number of worms as estimated from the egg output from 381 to 1, but toxic symptoms appeared during the latter half of the second course. R.T.L.

62—Tierärztliche Rundschau.

- a. SCHOOP, 1939.—“Ansiedlung eines Spulwurmes im Pankreas eines Schweines.” 45 (1), p. 11.

63—Tijdschrift voor Diergeneeskunde.

- a. TENHAEFF, C. & FERWERDA, S., 1939.—“De echinococcosis bij het varken in Nederland.” 66 (7), 329-343.

64—Tijdschrift over Plantenziekten.

- a. DEWEZ, W. J., 1939.—“Aaltjesziekte in maïs.” 45 (1), 23-24.

(64a) Dewez reports the occurrence of attack by the stem eelworm, *Anguillulina dipsaci*, on maize in Holland. The diseased plants were found on two separate areas of sandy-loam soil, poor in humus, where rye is regularly affected by this parasite and maize had been sown in the hope that it might prove to be a suitable rotational crop. The chief symptoms are described. In one case the attack was very severe, the crop being ruined. T.G.

65—Transactions of the American Microscopical Society.

- a. WALLACE, F. G., 1939.—“The life cycle of *Pharyngostomum cordatum* (Diesing) Ciurea (Trematoda: Alariidae).” 58 (1), 49-61.
- b. CABLE, R. M., 1939.—“Two new species of cotylomicrocercous cercariae from Indiana.” 58 (1), 62-66.
- c. ODLAUG, T. O., 1939.—“Abnormal conditions in the reproductive system of the trematode, *Gorgodera amplicava*.” 58 (1), 67-72.
- d. LAWLER, H. J., 1939.—“A new cestode, *Cylindrotaenia quadrijugosa* n. sp. from *Rana pipiens*, with a key to the Nematotaeniidae.” 58 (1), 73-77.
- e. SIMON, F., 1939.—“*Cheilospirura centroceri*, a new nematode from the sage grouse *Centrocercus urophasianus*.” 58 (1), 78-80.
- f. ACKERT, J. E., EDGAR, S. A. & FRICK, L. P., 1939.—“Goblet cells and age resistance of animals to parasitism.” 58 (1), 81-89.

(65a) The strigeid *Pharyngostomum cordatum* develops in *Segmentina calathus* in Canton. The metacercariae occur in tadpoles and the worms mature in the cat in one month. The Pharyngostominae is placed in the Alariidae.

R.T.L.

(65b) *Cercaria trichocephala* n. sp. and *C. abbrevistyla* n. sp. are described from *Goniobasis depygis* in Southern Indiana. A key is given to the 5 species of fresh-water cotylomicrocercous cercariae of the United States.

R.T.L.

(65c) The degenerate condition noted in the testes, vitellaria and uterus of certain specimens of *Gorgodera amplicava* is due to some factor in the reproductive system and not to external influences.

R.T.L.

(65d) Five of the sixteen amphibian cestodes are cylindrical and belong to the Nematotaeniidae. A key is given for their differentiation. A second species of the genus *Cylindrotaenia* is described from *Rana pipiens* in Michigan and named *C. quadrijugosa* n. sp.

R.T.L.

(65e) From the gizzard of the sage grouse, *Centrocercus urophasianus*, a new species *Cheilospirura centroceri* is described. It is very closely related to *C. spinosa*. The other nematodes known in this host are *Habronema urophasiana* and *Heterakis gallinae*.

R.T.L.

(65f) The literature on age resistance to intestinal nematodes is briefly noted. By nourishing chickens infected with *Ascaridia lineata* on water only, supplemented by intramuscular injections of glucose, it was demonstrated that the worms grew but little as contrasted with the worms in normally reared chickens. In a salt-dextrose solution upon a basic medium of dextrose-corn meal agar plates the larvae of *Ascaridia lineata* grew from 1.5 to 25.9 mm. in length in from 2 to 9 days. The authors have noted that in rats and chickens older individuals have more goblet cells in the duodenum than younger individuals, and they report the occurrence of an inhibitory nematode growth factor in the mucus of goblet cells.

R.T.L.

66—Transactions of the Royal Society of Tropical Medicine and Hygiene.

- a. EVANS, R. R., 1939.—“Cysticercosis in an athlete.” 32 (4), 549-550.
- b. GOPSILL, W. L., 1939.—“Onchocerciasis in Nyasaland.” 32 (4), 551-552.
- c. CAWSTON, F. G., 1939.—“Variation in the shape of schistosome ova.” 32 (4), 553-554.

- d. POYNTON, J. O. & HODGKIN, E. P., 1939.—“Two microfilariae of the Kra monkey (*Macaca irus*).” 32 (4), 555-556.
- e. FOSTER, A. O. & JOHNSON, C. M., 1939.—“An explanation for the occurrence of *Capillaria hepatica* ova in human faeces suggested by the finding of three new hosts used as food.” 32 (5), 639-644.
- f. FISK, G. H., 1939.—“Helminthiasis in Lagos, Nigeria.” 32 (5), 645-652.
- g. YOKOGAWA, S., 1939.—“Studies on the mode of transmission of *Wuchereria bancrofti*.” 32 (5), 653-668.
- h. CHUNG, H. L. & T'UNG, T., 1939.—“The non-specificity of the so-called specific biological tests for hydatid disease.” 32 (6), 697-706.

(66b) Twenty cases of onchocerciasis in man are reported from the district of Cholo in Nyasaland. *Simulium damnosum* occurs in the area in fast-flowing mountain streams. The commonest situation of the tumours was immediately below the 8th right rib in the mid-axillary line. None were observed on the scalp, neck or upper limbs. R.T.L.

(66d) *Microfilaria malayi* is endemic in the native population on the lower reaches of the Perak River. It is also prevalent in Kra monkeys in this area. Infective larvae were obtained by experimental feeding of *Mansonia uniformis*, *M. longipalpis* and *M. annulifera*. A non-periodic unsheathed microfilaria 600 μ long by 5 μ broad also occurred in two monkeys. R.T.L.

(66e) Three species of monkey are recorded as new hosts for *Capillaria hepatica*. These monkeys are used as food by the natives in Panama and the occasional occurrence of *C. hepatica* eggs in human faeces is therefore explained. R.T.L.

(66g) If Fülleborn's opinion that the infective larva of *Filaria bancrofti* can penetrate the unbroken skin as in *Dirofilaria immitis* is correct, Yokogawa believes that human filariasis should be much more prevalent than it is in Formosa, where *Culex fatigans* is very common and human carriers are continually being introduced from the mainland. The possibility that some additional “waiting” host is required is examined and rejected. The possibility of oral infection is also rejected. Yokogawa has also failed to implicate fleas as intermediaries. Experiments failed to show percutaneous infection through the unbroken skin but showed that it occurred through punctured skin and through a mosquito-bite wound in mice. The skin around the mosquito bite is swollen and oedematous and definite evidence was obtained that the larvae immediately exhibit lymphotaxis and enter the lymph spaces of the deeper tissues, but if the skin is dry and the bite poor the larvae remain inactive. It is assumed therefore that the spread of filariasis is largely dependent on chance. R.T.L.

(66h) Chung & T'ung have examined the specificity of the complement fixation and the intradermal tests in somatic cestode infections. Using as antigens hydatid fluid and cysticercus fluid, both hydatid and cysticercosis patients gave a strong positive reaction with both tests. These patients and also others with intestinal taenias gave a positive intradermal reaction. Cerebrospinal fluid from some of the patients with cerebral cysticercosis also gave a positive complement fixation. Hydatid fluid can also give a weakly positive reaction with the serum of rats infested with *C. fasciolaris*. Some positive results were also obtained with hydatid antigen by patients suffering from syphilis and kala-azar. P.A.C.

67—Veterinarski Arhiv.

- a. GANSLMAYER, R., 1939.—“Rezultati terenskih pokusa sa vapnom, obzirom na djelovanje na metiljskog puža.” 9 (1), 1-10. [German summary pp. 7-10.]
- b. WERTHEIM, P. & RUKAVINA, J., 1939.—“Prethodna obavijest o *Dicrocoelium lanceatum* kod nas.” 9 (2), 66-69. [French summary p. 69.]
- c. MIKAČIĆ, D., 1939.—“Neke primjedbe o *Protostrongylus* vrstama iz pluća ovce.” 9 (3), 126-133. [French summary pp. 132-133.]
- d. GANSLMAYER, R., 1939.—“Umjetna gnojiva kao sredstva za suzbijanje metiljskog puža.” 9 (5), 269-279. [German summary pp. 277-279.]

(67a) Ganslmayer reports the results of using slaked lime against *Limnaea truncatula* in various types of liver-fluke habitat in the Zagreb region. The slaked lime was used broadcast by hand as a dry powder or, in the form of milk of lime, sprinkled from a watering can. The dry method, whose efficacy depends on contact with the snail, works well in swampy localities, where 80% of snails may be killed by an application of 1,000 to 2,000 kg. per hectare. The wet method, using 10,000 litres per hectare of a 10% solution, may be as much as 100% effective where the snails are not protected by vegetation. Ponds and streams must reach an alkalinity of over pH 11 before a lethal effect is achieved, and in streams it is difficult to maintain this alkalinity sufficiently long. B.G.P.

(67b) From an examination of over 1,000 snails of 9 species in a *Dicrocoelium* district of Yugoslavia, Wertheim & Rukavina found that 14 of 97 *Zebrina detrita* were naturally infected with *Cercaria vitrina*, and 3 of 602 *Helicella ericetorum*. The other species (*Helix*, *Pomatias*, *Cochlostoma* and *Helicigona* spp.) were not infected. B.G.P.

(67c) Continuing his study of Yugoslavian sheep parasites, Mikačić here discusses the taxonomy of *Protostrongylus* species. Having seen Railliet & Henry's original *P. ocreatus* he considers that the worm so described by Cameron (1927) and Baylis (1929) is another species, possibly *P. communatus*. Three specimens of *Protostrongylus* from different localities appear to constitute a new species. B.G.P.

(67d) Continuing his experiments on the chemical control of *Limnaea truncatula* [see Helm. Abs., Vol. VII, No. 426b] Ganslmayer has now turned his attention to the fertilizers: superphosphate, calcium cyanamide, and potash (“40% Kalisalz”). Laboratory experiments show that solutions of these are lethal in the following times:—30 min. (1% solution), 20 min. (1%), and 30 min. (5%), respectively. Field experiments show that effective rates of application of the three are 300 kg., 400 kg. and 400 to 600 kg. per hectare, respectively. Taking all factors into account, superphosphate is the best of the three and further experiments with this are recommended. B.G.P.

68—Veterinary Journal.

- a. JERROM, J. H. G., 1939.—“Liver fluke disease in Sind.” 95 (1), 42-43.

(68a) Jerrom reports that since the completion of the Sukkur Barrage in 1932, the incidence of liver-fluke disease in ruminants in Sind has increased from a negligible figure until now it “far exceeds that of any other disease.”

Carbon tetrachloride is proving a valuable anthelmintic and is given in the form of a single dose of 8 to 10 c.c. for buffaloes and cattle, 1 to 2 c.c. for sheep and goats, in 4 to 5 parts of sweet oil, by glass-and-vulcanite glycerine syringe, after at least 12 hours' fasting to avoid tympany. Some 50,000 animals have been treated in two years.

B.G.P.

69—Veterinary Medicine.

- a. DIKMANS, G., 1939.—“Parasitic enteritis in calves.” 34 (1), 28-30.
- b. CARLSON, E. R., 1939.—“Sheep vermicide—a stabilized concentrate.” 34 (1), 48-49.
- c. BENBROOK, E. A., 1939.—“Strongylidae of the horse.” 34 (2), 100-102.

(69a) Dikmans points out that little attention as yet has been given to the matter of round worm parasites of cattle. It is suggested that *Cooperia* and *Ostertagia* species are responsible for greater loss in cattle than has been hitherto supposed, and this is illustrated by referring to various authors and his own experience of outbreaks of disease caused by these worms in calves.

J.W.G.L.

(69b) Carlson describes a method for stabilizing a concentrated solution of copper sulphate and nicotine sulphate by the use of gum arabic. The concentrated solution is twelve times as strong as that recommended for a sheep vermicide, and its use greatly facilitates transport and storage in the treatment of large numbers of animals.

K.S.

(69c) A short dissertation on the strongyles of the horse is given by Benbrook, which includes the methods of dosing with oil of chenopodium, carbon tetrachloride and normal butylidene chloride, and illustrates a method of faecal examination for eggs.

J.W.G.L.

70—Veterinary Record.

- a. TAYLOR, H., 1939.—“A note on the treatment of husk in cattle.” 51 (3), 75-76.
- b. HUDSON, R., 1939.—“Parasitic bronchitis, husk or hoose.” 51 (9), 268-270.
- c. TAYLOR, E. L., 1939.—“Some aids to diagnosis of helminth disease.” [Paper presented at the Southern Counties Veterinary Society.] 51 (10), 330-333.
- d. TAYLOR, E. L., 1939.—“The rôle of pastures in the development of the strongyloid diseases of grazing animals.” 51 (16), 495-504.

(70a) Henry Taylor has discontinued intratracheal injections for the treatment of husk in cattle. He prefers oral administrations of ol. tereb. with 0.2% chloroform and 0.1% ether, given on three mornings fasting, in doses of 1 to 2 ounces for calves 6 to 18 months old, in linseed oil for the first dose and in milk subsequently. This is accompanied by the use of haematinics, good feeding, a change of pasture and housing until the dew is off the grass.

J.W.G.L.

(70b) The clinical aspect of husk in cattle and sheep is discussed and attention drawn to its prevalence during the autumn of 1938. The treatment recommended is an old-time intratracheal injection and the housing at night of young and weak animals. For animals showing increased respiration

oral administrations are advised. Control may be aided by the use of salt and chalk-licks, clean pastures, good feeding and a clean water supply. J.W.G.L.

(70c) In this report of a paper read by Taylor to the Southern Counties Veterinary Society it is pointed out that the casual use of flotation methods may give a misleading picture of a worm infestation and that egg-counting at its best can only serve as an aid in diagnosis. Additional evidence of helminthiasis must be derived from other sources and might be provided by a knowledge of the life-histories of the parasites and of the conditions under which disease is produced, but the best evidence is obtained from a post-mortem examination. D.O.M.

(70d) Taylor discusses the factors influencing the development of infective larvae of parasitic worms on pastures, and considers that the best method of control is alternate grazing with unsuitable host animals. He instances a case where 6,000 infective red-worm larvae were obtained from a pound of herbage on a horse paddock; a sheep grazing such a paddock would destroy from 60,000 to 90,000 of the larvae. Mixed stocking is also a valuable means of control, and the author suggests that, even when ewes and lambs are grazed together, the older stock being more resistant to infection would limit the infective material available for the lambs. D.O.M.

71—Wiener Tierärztliche Monatsschrift.

- a. GEBAUER, O., 1939.—“Statistische Beobachtungen über den Milchertrag während einer Leberegelseuche.” 26 (2), 33-38.
- b. WIRTH, D. & POMMER, A., 1939.—“Spulwurmbefall, Rachitis, Hüft- und Kniegelenksluxationen beim Hund.” 26 (2), 38-41.

(71a) Gebauer gives data on the reduced yield of milk in the months July to March 1937-38, due to liver-fluke disease in cattle, taking as standard the yield for the corresponding months of 1936-37. In a series of 6 graphs the yield in litres is plotted against time for the two seasons, and the 1937-38 yield is also plotted as a percentage of the 1936-37 yield, for the following districts: Radochen, Dirnbach, Neusetz, Auenbergen and Hürtherberg. The 6th graph gives the aggregate values, and shows that on the average the yield for 1937-38 fluctuated between about 65 to 86% of that for 1936-37. The worst effect was in Radochen in December 1937, when the yield was only 13.6% of that in December 1936. Timely anthelmintic treatment, before the onset of severe symptoms, is of real importance, and where State aid is contemplated for this purpose it should be given only in October and November. Control of the intermediary by drainage of wet pastures is also urged. B.G.P.

72—Zentralblatt für Bakteriologie. Abteilung I. Originale.

- a. KUNERT, H., 1939.—“Ein Nachweis zur Dauerheilung der Bilharziosis haematobia durch Injektion von Germanin (Bayer 205).” 143 (3/4), 161-164.

(72a) As large quantities of *Bilharzia* eggs were passed, with pain in the vesical region, by a patient 3 hours after receiving an intravenous injection of 5 g. of Bayer 205 (“Germanin”), the use of this drug to determine if a cure had been effected by other treatments suggested itself. A dose of 3 g.

dissolved in 20 c.c. of distilled water was given intravenously to adults and 2 g. in 20 c.c. to children. The urine was then collected at intervals of 3, 6 and 15 hours after injection. All cases which reacted to "Germanin" by expelling dead eggs 5 months after treatment were considered permanently cured. Tests were made on 27 cases. R.T.L.

73—Zentralblatt für Bakteriologie. Abteilung II.

- a. GOFFART, H., 1939.—"Zur Lebensgeschichte von *Heterodera schachtii* major (Nematodes)." 99 (18/23), 394-399.

(73a) Goffart describes observations on the life-cycle of the oat-strain of *Heterodera schachtii*. Two types of larvae, major and minor, are commonly found in varying proportions in oat-strain cysts. Only healthy major larvae are capable of entering the roots of cereals. These hatch from the cysts at the point of least resistance. Only a proportion of the larvae which enter the roots succeed in completing their life-cycle. Observations on oats, wheat, barley and rye show that host species does not affect speed of development; the larvae need 9 months to become mature. Larvae which enter the roots in the autumn do not complete their development until the following June. Hatching occurs as soon as the soil is adequately heated. Larvae may survive free in soil for at least 6 months. M.J.T.

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- 74—HARANT, H., 1939.—"Parasitologie médicale." Paris, xv+202 pp.